

REMARKS

In order to expedite the prosecution of the present application, Claim 12 has been amended to recite that the reactive modifier is at least one member selected from the group consisting of polyethylene glycol di-acrylate, polyethylene glycol dimethacrylate, bisphenol A polyethylene glycol di-acrylate, bisphenol A polyethylene glycol dimethacrylate, bisphenol S polyethylene glycol dimethacrylate, polyethylene glycol diglycidyl ether and the compound of chemical formula I on page 7 of the clean copy of the specification containing an aziridine group. No new matter has been added.

The currently claimed invention is directed to surface treatment chemicals for forming a polymerization reaction product on the surface of a fiber and comprises a water-soluble organic substance selected from the group consisting of at least one of a protein, protein derivative and polysaccharide, having an average molecular weight of from 100 to 20,000, a polymerization initiator and a reactive modifier which is at least one member selected from the group consisting of polyethylene glycol di-acrylate, polyethylene glycol dimethacrylate, bisphenol A polyethylene glycol di-acrylate, bisphenol A polyethylene glycol dimethacrylate, bisphenol S polyethylene glycol dimethacrylate, polyethylene glycol diglycidyl ether and the compound of formula I containing an aziridine group.

The water-soluble organic substance and the reactive modifier participate in a graft polymerization reaction in the presence of a fiber to form a hydrophilic layer on the fiber. The hydrophilic layer results in a superior moisture absorbency being given to the synthetic fiber and, additionally, the hydrophilic layer is very durable and has a soft feel on the fiber. It is respectfully submitted that the currently claimed invention clearly is patentably distinguishable over the prior art cited by the Examiner.

The Shepler et al reference discloses a copolymer which is formed in the reaction of a synthetic emulsion and a protein. The reactive synthetic emulsion is an interpolymer of (1) an ester of an α,β -unsaturated carboxylic acid, (2) an ester of an α,β -unsaturated carboxylic acid in which the ester portion contains an oxirane ring, (3) a monoethylenically unsaturated compound containing a vinyl group and (4) an α,β -unsaturated mono- or di-carboxylic acid or a salt thereof. Although this reference does disclose, as pointed out by the Examiner, various acrylates and methacrylates in column 4, lines 9-24, the specific reaction modifiers now required in the present claims are not shown nor suggested. As such, it is respectfully submitted that the currently claimed invention clearly is patentably distinguishable over this reference.

The Densinger et al et al reference discloses water-soluble or water-dispersible graft polymers of proteins which are obtained by free radical-initiated polymerization of a monomer or a monomer mixture comprising (a) from 20-100% by weight of acrylic acid or methacrylic acid or a mixture thereof or alkali metal, alkaline earth metal or ammonium salts thereof, (b) from 0-80% by weight of other monoethylenically unsaturated monomers which can be copolymerized with the monomers (a) and (c) from 0 to 5% by weight of monomers containing at least two ethylenically unsaturated, non-conjugated double bonds in the molecules, in the presence of proteins. Although this reference discloses in column 2, lines 10-51, various acrylates and methacrylates that can be used as monomers, there is no disclosure in this reference regarding the specific reactive modifier required by currently presented Claim 12. As such, it is respectfully submitted that Claim 12 is clearly patentably distinguishable over this reference.

The Kroner et al reference discloses water-resistant films and coatings which are prepared by treating films or coatings of water-soluble or dispersible grafted polymers prepared with monoethylenically unsaturated monomers at above

40% C and/or with at least one compound which is a hardener for proteins.

These water-resistant films and coatings are disclosed as being useful as compostable packaging materials or as outer layers of diapers. Examples of monoethylenically unsaturated carboxylic acids are disclosed as being acrylic acid, methacrylic acid and esters thereof with monohydric or polyhydric alcohols. However, as with the previously discussed references, there is no specific disclosure of the reaction modifiers required by the present claims. As such, it is respectfully submitted that the currently presented claims clearly are patentably distinguishable over the references cited by the Examiner.

Respectfully submitted,


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